

GitHub Code review using Amazon CodeGuru

Name

Customer Success Architect

Nov 16, 2022

Agenda

- Introduction to CodeGuru
- Providers supported
- Amazon CodeGuru Reviewer
- How to access CodeGuru Reviewer
- Demo – Step by Step Instructions
- Q&A

Introduction to Amazon CodeGuru

Amazon CodeGuru is a developer tool that provides intelligent recommendations to improve code quality and identify an application's most expensive lines of code.

- Amazon CodeGuru Reviewer uses program analysis and machine learning to detect Potential defects are difficult to find
- Offers suggestions for improving your Java and Python code.
- Proactively detects code defects

Reference - <https://aws.amazon.com/codeguru/>

Amazon CodeGuru and providers supported

CodeGuru Reviewer supports associations with repositories from the following source providers:

- GitHub and GitHub Enterprise Cloud (These are listed together because you work with them identically using CodeGuru Reviewer.)
- GitHub Enterprise Server
- AWS CodeCommit
- Bitbucket

Amazon CodeGuru Reviewer

To begin reviewing code, you can associate your existing code repositories on GitHub, GitHub Enterprise, Bitbucket, or AWS CodeCommit in the CodeGuru console.

- Review and flag code defects
- Make recommendations to improve your code
- When you associate CodeGuru Reviewer with a repository, CodeGuru Reviewer can find and flag code defects and suggest recommendations to improve your code.
- CodeGuru Reviewer provides actionable recommendations with a low rate of false positives
- CodeGuru improves its ability to analyze code over time based on user feedback.
- CodeGuru Reviewer automatically analyzes pull requests that you make.
- Run repository analyses on the code in your branch to analyze all the code at any time

Accessing CodeGuru Reviewer

You can access CodeGuru Reviewer using any of the following methods:

- **Amazon CodeGuru Reviewer console** –

<https://console.aws.amazon.com/codeguru/reviewer/>

- **AWS CLI** – For more information, see [Getting started with the AWS CLI](#) in the *AWS Command Line Interface User Guide*.

- **CodeGuru Reviewer API** – For more information, see the [Amazon CodeGuru Reviewer API Reference](#).

- **AWS SDKs** – For more information, see [Tools to Build on AWS](#)

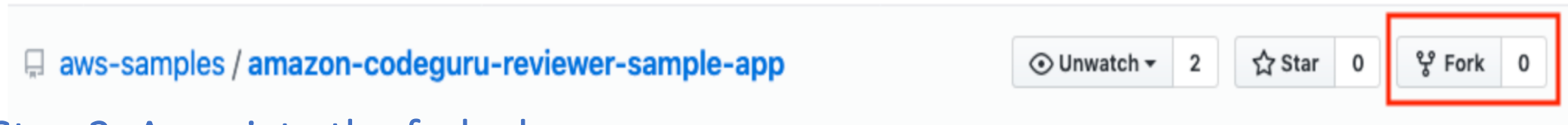
P.S You can create a GitHub or GitHub Enterprise Cloud repository association using the Amazon CodeGuru Reviewer console. You cannot create a GitHub or GitHub Enterprise Cloud repository association using the AWS CLI or the CodeGuru Reviewer SDK. Before you create a GitHub or GitHub Enterprise Cloud repository association, you must have a GitHub or GitHub Enterprise Cloud repository.

Step By Step instructions for Demo

Reference - <https://github.com/aws-samples/amazon-codeguru-reviewer-sample-app/blob/master/README.md>

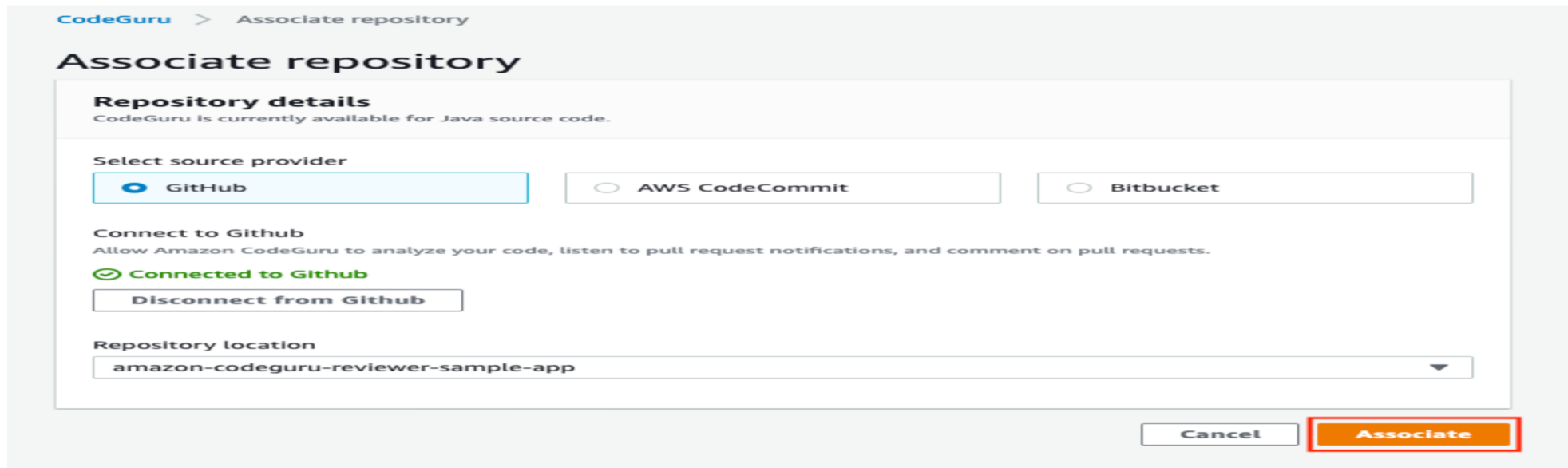
Step 1: Fork this repo

- Log in to GitHub and choose **Fork** to fork this example app to your GitHub account.



Step 2: Associate the forked repo

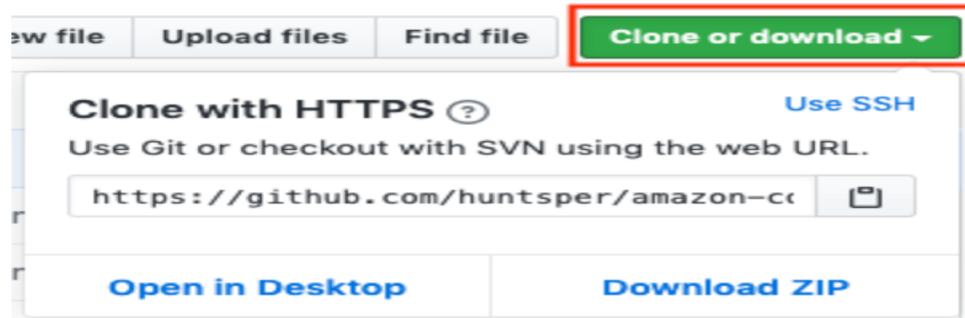
- Log in to the [CodeGuru dashboard](#).
- Choose **Associate repository**.
- Make sure **GitHub** is selected, and then choose **Connect to GitHub**.
- To allow CodeGuru Reviewer to access your account, choose **Authorize aws-codesuite**. If prompted, confirm your GitHub password.
- Select the **amazon-codeguru-reviewer-sample-app** repository, and then choose **Associate**.



CodeGuru Reviewer is now associated with the repo and listening for pull requests.

Step 3: Push a change to the code

- Clone the forked repo, replacing USER_ID in the URL with your actual user ID.
- `git clone https://github.com/USER_ID/amazon-codeguru-reviewer-sample-app.git` You can get the URL by choosing **Clone or download**.



Note: If you access your GitHub repositories using SSH, use the SSH URL instead of the HTTPS URL shown here.

Check out a new branch.

```
cd amazon-codeguru-reviewer-sample-app
```

```
$ git checkout -b dev
```

Copy the Java class at

src/main/java/com/shipmentEvents/handlers/EventHandler.java into **src/main/java/com/shipmentEvents/demo**

```
$ cp src/main/java/com/shipmentEvents/handlers/EventHandler.java src/main/java/com/shipmentEvents/demo/
```

GitHub and CodeGuru Reviewer will treat this as a new file.

Push your changes.

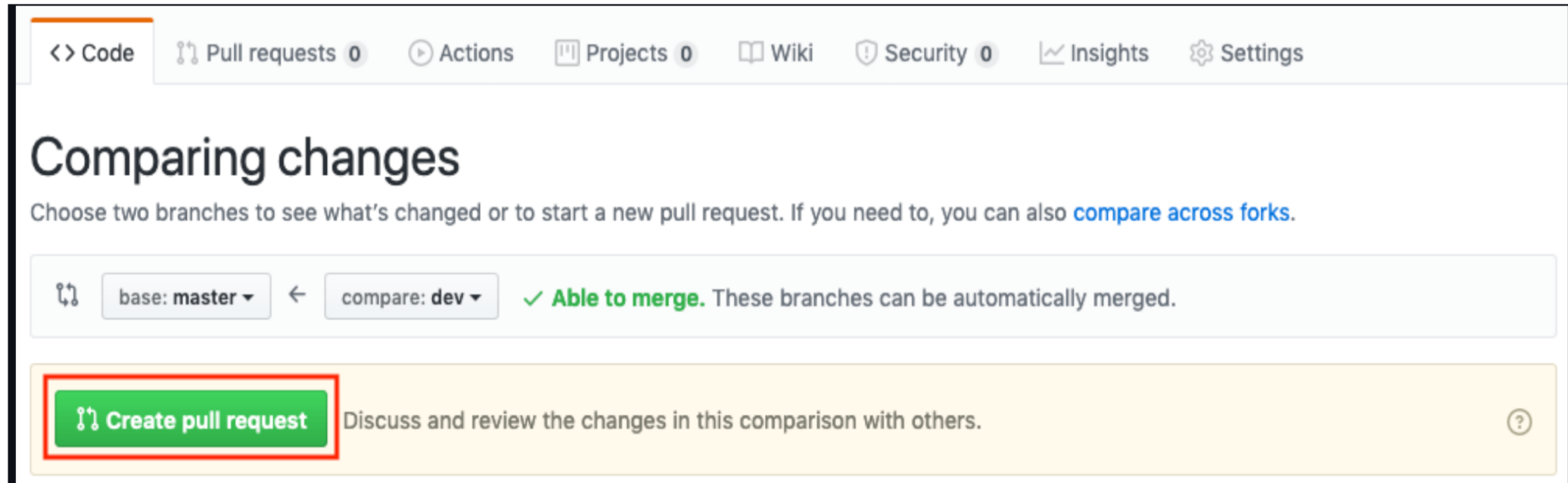
```
$ git add --all
```

```
$ git commit -m 'new demo file'
```

```
$ git push --set-upstream origin dev
```

Step 4: Create a pull request

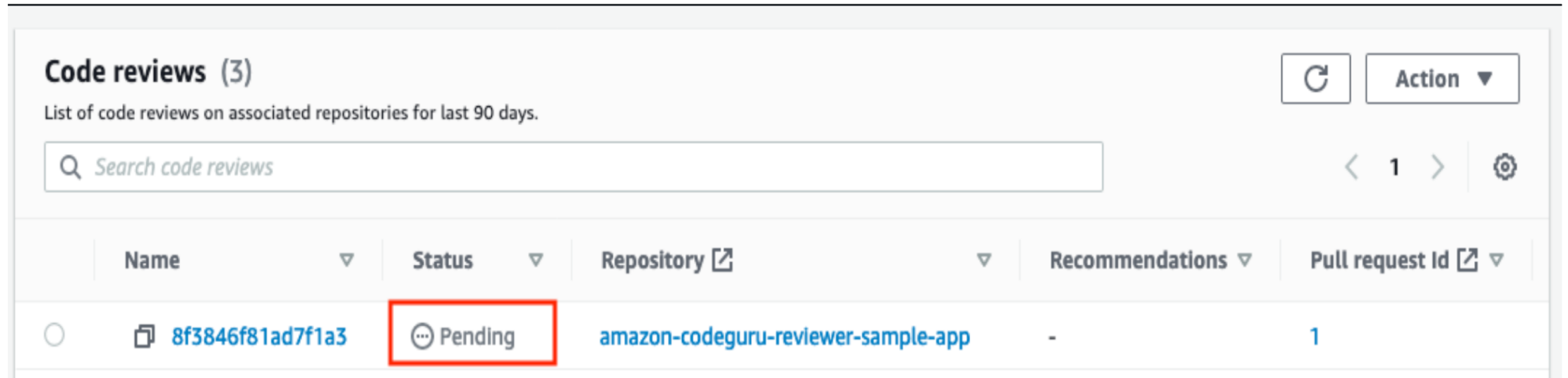
- In your forked GitHub repo, choose New pull request.
- On the left side of the comparison (base), select USER_ID/amazon-codeguru-reviewer-sample-app, where USER_ID is your GitHub user ID. Leave the branch at master.
- On the right side of the comparison (compare), change the branch to dev. The branches should be showing as Able to merge.



- Choose Create pull request and, again, Create pull request.

Step 5: Review recommendations

- After a few minutes, CodeGuru Reviewer will issue recommendations on the same GitHub page where the pull request was created.
- You can check the status of the code review in the Code reviews view of the CodeGuru Reviewer console.



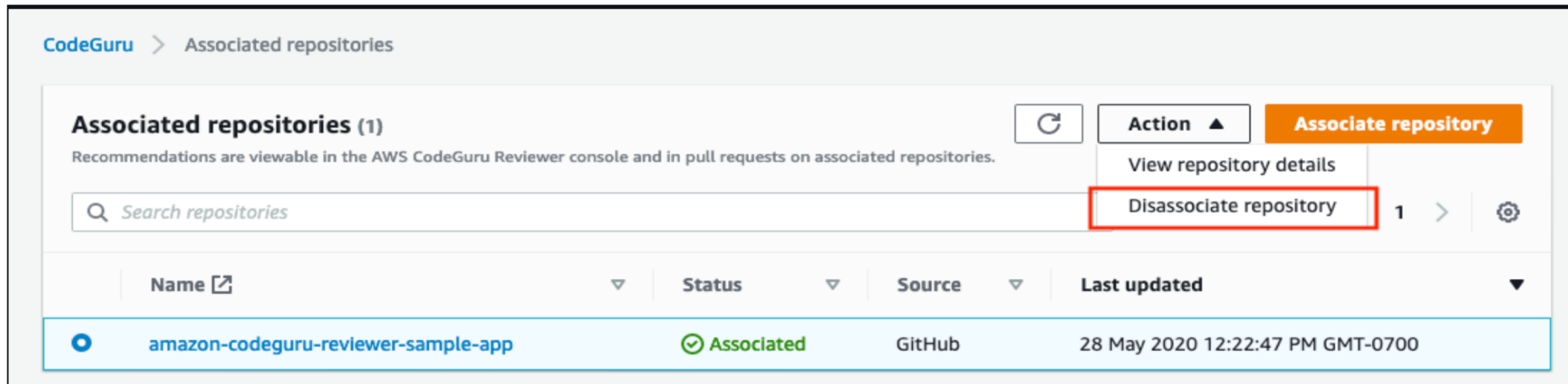
The screenshot shows the GitHub 'Code reviews' section. At the top, it says 'Code reviews (3)' and 'List of code reviews on associated repositories for last 90 days.' There is a search bar and a refresh button. Below this is a table with columns: Name, Status, Repository, Recommendations, and Pull request Id. The first row shows a review with ID '8f3846f81ad7f1a3', status 'Pending' (highlighted with a red box), repository 'amazon-codeguru-reviewer-sample-app', and 1 recommendation.

Name	Status	Repository	Recommendations	Pull request Id
8f3846f81ad7f1a3	Pending	amazon-codeguru-reviewer-sample-app	-	1

When the code review is complete and the recommendations appear in GitHub, you can provide feedback on the recommendations using the thumbs up or thumbs down icon. Any positive or negative feedback can be used to help improve the performance of CodeGuru Reviewer so that recommendations get better over time.

Step 6: Clean up

- After you're finished with this demo, clean up your resources.
- In your GitHub fork of **amazon-codeguru-reviewer-sample-app**, go to **Settings**, and then choose **Delete this repository**. Follow the instructions to delete the forked repository.
- Delete your clone of the forked repository, for example, `rm -rf amazon-codeguru-reviewer-sample-app`.
- In the CodeGuru Reviewer console, select the example repository, choose **Actions**, and then choose **Disassociate repository**.



- For more information about how to use CodeGuru Reviewer, see the [Amazon CodeGuru Reviewer User Guide](#).
- *LicenseThis* library is licensed under the MIT-0 License. See the `LICENSE` file.

Q&A ?